Operating Instructions

AirChek® 52

Catalog No. 224-52

SKC Inc.
863 Valley View Road
Eighty Four, PA 15330

Form #37714 Rev 1001

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Indicates a warning or caution.

Indicates a premier feature of the pump.

Notice: This operating instruction may not address all safety concerns (if any) associated with this product and its use. The user is responsible for determining and following the appropriate safety and health practices and regulatory limitations (if any) before using the product. The information contained in this document should not be construed as legal advice, opinion, or as a final authority on legal or regulatory procedures.

Description

The AirChek 52 Personal Sample Pump is designed for rugged industrial use at flows from 5 to 3000 ml/min. Ideal for on-worker applications, use the AirChek 52 for short-term or full-shift sampling with sorbent tubes, impingers, size-selective samplers, or filter cassettes.

AIRCHEK® 52
Durable RFI-shielded Case provides protection from RFI (27 to 1000 MHz)
Control Cover (raised) protects LCD, flow adjustment, and on/off button
Accessory Mounting Screws allow sampling accessories to be secured to the pump (e.g., impinger holder)
Pump Intake with replaceable filter
Digital LCD shows elapsed run time, low battery, and flow fault
Quick-change Rechargeable Battery
Flow Adjustment adjusts flow rate from 1000 to 3000 ml/min
On/Off Button

Top view: AirChek 52 with LCD indicator

AirChek 52 Sample Pump

Performance Profile

Flow Range: 1000 to 3000 ml/min
(5 to 500 ml/min requires low flow accessories, *see page 22.*)

Flow Control: Holds constant flow to ± 5% of set-point after calibration

Compensation Range: 1000 ml/min up to 25 ins water back pressure
2000 ml/min up to 25 ins water back pressure
2500 ml/min up to 20 ins water back pressure
3000 ml/min up to 15 ins water back pressure

Typical Back Pressure of Sampling Media (*inches water*)

Flow Rate (L/min)	1.0	1.5	2.0	2.5
Filter/Pore Size (µm)				
25-mm MCE/0.8	6	9	12	15
25-mm MCE/0.45	14	22	28	35
37-mm MCE/0.8	2	3	4	5
37-mm PVC/5.0	1	1	2	2

Compare the information in this table to pump compensation range to determine appropriate applications.

Run Time: **NiCad Battery:** 8 hrs minimum at above compensation ranges; dependent on media used. *See Table 1 on page 4.*
NiMH Battery: 12 hrs minimum at 2000 ml/min and up to 25 inches water back pressure; dependent on media used. *See Table 2 on page 4.*
Battery Eliminator: Pump provides extended runs.

Power Supply: **Rechargeable 4.8-V nickel metal hydride (NiMH) battery pack,** 3.3 Ah capacity or
Rechargeable 4.8-V nickel cadmium (NiCad) battery pack, 1.8-Ah capacity
A **battery eliminator** is available (see Optional Accessories); use voids the UL Listing for intrinsic safety.

Battery Charging Time: *(varies with battery capacity and level of discharge)* 6 to 8.5 hrs with PowerFlex® charger

Temperature:
Operating: 32 to 113 F (0 to 45 C)
Storage: -4 to 113 F (-20 to 45 C)
Charging: 50 to 113 F (10 to 45 C)

Humidity: 0 to 95% non-condensing

Protect sample pump from weather when in use outdoors.

Flow Fault: If the pump is unable to compensate for longer than 15 seconds due to excessive back pressure, the pump enters flow fault. During flow fault, the pump stops, the fault icon appears on the display, and elapsed time remains on the display. Auto-restart is attempted up to 5 times. **Elapsed time information will be lost on restart.**

Low Battery Fault:	LCD displays low battery icon and pump shuts down. LCD remains on.
Time Display:	LCD shows elapsed pump run time in minutes up to 99,999.
LCD Indicator:	LCD always remains on. Displayed elapsed run time information resets when pump is started.
Noise Level:	62.5 dBA* - pump without case 55 dBA* - pump housed in noise-reducing case (optional accessory Cat. No. 224-96C, *see page 24*)
	** Measured 3 ft (1 m) distance from pump operating at 2 L/min with a 37-mm, 0.8-µm MCE filter cassette*
RFI/EMI Shielding:	27 to 1000 MHz
Intrinsic Safety:	UL Listed for Intrinsic Safety: Class I, Division 1 and 2, Groups A, B, C, D; Class II, Division 1 and 2, Groups E, F, G; and, Class III, Temperature Code T3C. *ATEX-approved models available. Contact SKC.*
Dimensions:	5 x 3 x 1.75 ins (12.7 x 7.6 x 4.4 cm)
Weight:	20 oz (567 gm)
Multiple-tube Sampling:	Requires additional accessories to sample with up to four sorbent tubes simultaneously at flows from 5 to 500 ml/min. *See Optional Accessories on page 24.*

CE marked

UL Listed for intrinsic safety

ATEX-approved models available

Table 1. AirChek 52 Run Time in Hours with NiCad Battery
Following are typical run times achieved when using a fully charged nickel-cadmium (NiCad) battery pack. Data is sorted by type of sample media. All run times are listed in hours. Results are obtained using a new pump and new fully charged battery. Pump performance may vary.

Mixed Cellulose (MCE) filter, 0.8-µm pore size

	Filter Diameter	
Flow Rate (L/min)	**37 mm**	**25 mm**
2.0	24.5	16.5
2.5	22.9	12.7
3.0	18.9	**

Polyvinyl Chloride (PVC) filter, 5.0-µm pore size

	Filter Diameter	
Flow Rate (L/min)	**37 mm**	**25 mm**
2.0	25.8	24.9
2.5	24.3	21.1
3.0	25.1	18.6

*** Filter back pressure exceeded pump capability during testing.*

Note: *Increases in back pressure during sampling due to buildup of sample on the filter can decrease battery life.*

Table 2. Pump Run Time in Hours with NiMH Battery
Following are typical run times achieved when using a fully charged nickel-metal hydride (NiMH) battery pack. Data is sorted by type of sample media. All run times are listed in hours. Results are obtained using a new pump and new fully charged battery. Pump performance may vary.

Mixed Cellulose (MCE) filter, 0.8-µm pore size

	Filter Diameter	
Flow Rate (L/min)	**37 mm**	**25 mm**
2.0	40	37
2.5	38	29
3.0	34	25

Polyvinyl Chloride (PVC) filter, 5.0-µm pore size

	Filter Diameter	
Flow Rate (L/min)	**37 mm**	**25 mm**
2.0	56	47
2.5	48	41
3.0	42	38

Note: *Increases in back pressure during sampling due to buildup of sample on the filter can decrease battery life.*

Setup

Installing the Battery Pack

1. Align arms on top half of case with slots on either side of the battery pack housing. Ensure the back of the battery pack with the charging jack is on the same side as the belt clip.
2. Slide battery pack up until arms click into place.
3. Push each security screw into the battery pack housing and tighten.
4. Completely charge battery before use (*see Charging the Battery Pack*).

Charging the Battery Pack

For proper maintenance of battery packs, SKC offers a charger (*see Accessories on page 24*) that conditions the battery for optimum performance in 6 to 8.5 hours.

1. For optimum charge, ensure pump is **not** running.
2. Insert the charging plug into the sampler's charging jack.
3. Charge battery pack completely before use.

Plug the SKC PowerFlex® charger cable into the jack on the back of the battery pack (*see charger operating instructions*).

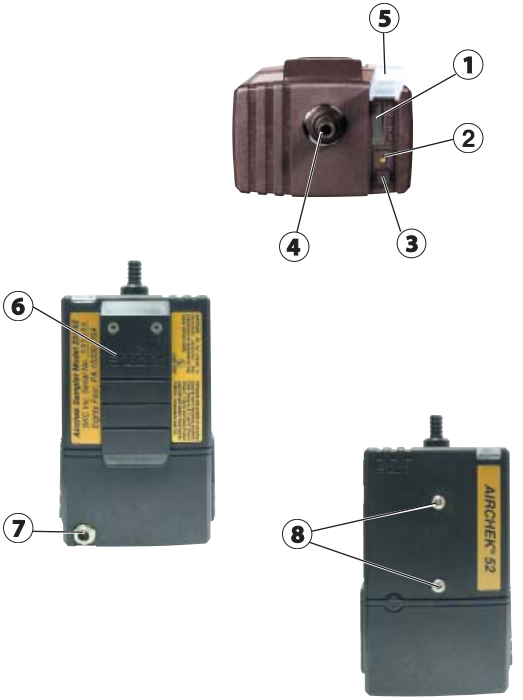
After charging the battery pack, it is good practice to run the pump for approximately 5 minutes before calibrating. This ensures the battery is in more steady-state conditions and improves the agreement in pre and post-sampling calibrations.

- ***To comply with intrinsic safety regulations, do not charge or operate the pump from the charger in hazardous locations.***
- ***Using a non-approved charger voids any warranty.***
- ***Use of a repaired or rebuilt battery pack voids any warranty and the UL Listing for intrinsic safety.***
- ***Use of any device other than the approved battery pack to power the pump voids the UL Listing for intrinsic safety and any warranty.***
- ***Ensure proper orientation of charging cable before plugging it into the charging jack. Improper orientation/contact will short-circuit the battery and voids any warranty.***
- ***Short-circuiting the battery pack will render it immediately inoperative.***
- ***Failure to follow warnings and cautions voids any warranty.***

For information on SKC pump battery packs, visit http://www.skcinc.com/instructions/1756.pdf.

Operation

High Flow Applications (1000 to 3000 ml/min)



1 LCD
2 Flow adjustment screw
3 On/Off button
4 Pump intake/inlet hose barb
5 Protective control cover
6 Belt clip
7 Charging jack
8 Accessory mounting screws

Figure 1
Front, back, and top views of AirChek 52 Sampler
For additional drawings, see pages 21 and 23.

1

Setup

Ensure that the battery is fully charged before sampling. *See page 5 for details.*

After charging the battery pack, it is good practice to run the pump for approximately 5 minutes before calibrating. This ensures the battery is in more steady-state conditions and improves the agreement in pre and post-sampling calibrations.

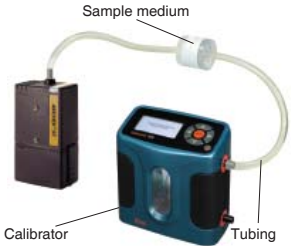
Charger and battery connected

2 Setting or Verifying Flow Rate

Ensure pump has run for 5 minutes before calibrating.

Using 1/4-inch Tygon® tubing, connect the sample medium to the pump intake (Figure 1, #4).

Lift the control cover (Figure 1, #5). Start the pump using the on/off button (Figure 1, #3).



Calibration train with filter cassette

Connect a calibrator to the intake of the sample medium.

Adjust flow by using a screwdriver to turn the flow adjustment screw (Figure 1, #2), clockwise to increase or counterclockwise to decrease flow, until the calibrator indicates the desired flow rate. Use proper calibration technique.

When the flow rate is set, press the on/off button to turn off the pump and disconnect the calibrator.

Replace the sample medium used for calibration with an unexposed medium for sample collection.

3 Sampling

Before use, allow pump to equilibrate after moving it from one temperature extreme to another

Protect sample pump from weather when in use outdoors.

Use of any device other than the approved battery pack to power the pump voids the UL Listing for intrinsic safety and any warranty.

Clip sample medium to worker and pump to belt.

For personal sampling, clip the sample collection medium to the worker in the breathing zone and the pump to the worker's belt using the belt clip.

Press the on/off button to clear the elapsed time display and to start sampling. Record the start time. The LCD will automatically track elapsed pump run time.

At the end of the sampling period, press the on/off button and record stop time.

continued on page 8

Possible Displays During Sampling

Flow or Battery Fault Shutdown - If the pump is unable to compensate due to excessive back pressure or a low battery condition exists, the sampler will shut down and timing functions will pause. Either a battery-shaped icon or a flow fault icon (→I) will display on the LCD depending on the cause of the shutdown. Upon flow fault, the pump will attempt to restart up to 5 times. To restart from flow fault, correct the blockage and press the on/off button twice. **Elapsed time display will reset to 0 when pump is restarted.** If the battery icon is displayed, recharge the battery before sampling.

Displayed Elapsed Run Time - Elapsed run time is displayed continuously on the LCD. For elapsed times after 999 minutes, the display still shows elapsed time, but alternates displaying the first two digits of the elapsed time and the last three digits. For example, a pump that has run for 1,440 minutes would display first "01" and then "440." The display maximum is 99 999, which is 99,999 minutes.

3

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Sampling with Impingers

Place an in-line trap between the pump and the impinger. The impinger and trap can be mounted to the sampler using the accessory mounting screws (Figure 1, #8) or placed in a holster at the worker's waist.

Impinger holder on pump with impinger and trap

Impinger sampling requires an in-line trap (SKC Cat. No. 225-22 or 225-22-01) to prevent fumes from accidentally being drawn into the sampler. Single or dual impinger/ trap holders (SKC Cat. No. 225-20-01 or 225-20-02) may be mounted directly to the face of the sampler using the accessory mounting screws.

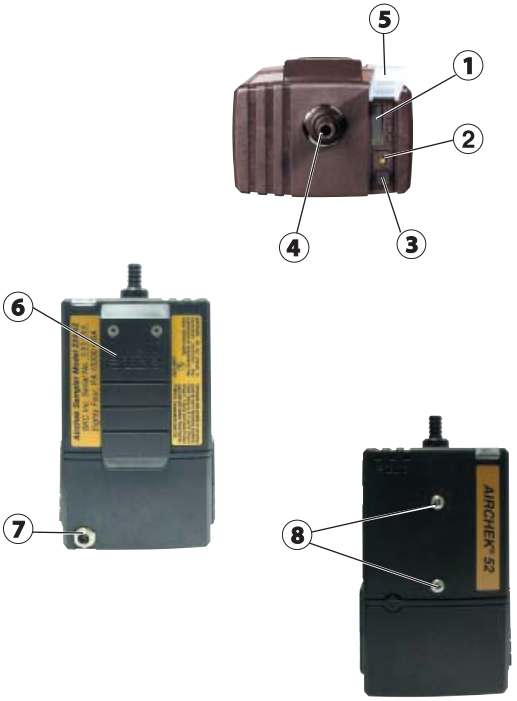
Failure to use an appropriate in-line trap during impinger sampling voids any warranty.

Protect sample pump from weather when in use outdoors.

Use of any device other than the approved battery pack to power the pump voids the UL Listing for intrinsic safety and any warranty.

Low Flow Applications (5 to 500 ml/min)

Using a CPC and Single Adjustable Low Flow Holder



1 LCD

2 Flow adjustment screw

3 On/Off button

4 Pump intake/inlet hose barb

5 Protective control cover

6 Belt clip

7 Charging jack

8 Accessory mounting screws

Figure 1

Front, back, and top views of AirChek 52 Sampler

For additional drawings, see pages 21 and 23.

1

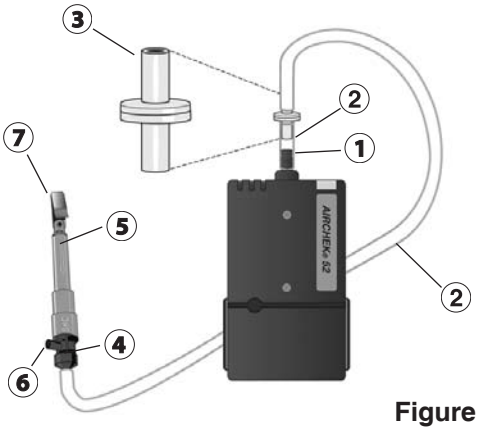
Setup - Low Flow

Ensure that the battery is fully charged before sampling. *See page 5 for details.*

After charging the battery pack, it is good practice to run the pump for approximately 5 minutes before calibrating. This ensures the battery is in more steady-state conditions and improves the agreement in pre and post-sampling calibrations.

Charger and battery connected

Setting or Verifying Flow Rate - Low Flow



1 Pump intake
2 Tygon tubing
3 Constant Pressure Controller (CPC)
4 Single Adjustable Low Flow Holder
5 Protective cover for sample tube
6 Flow adjust screw (needle valve)
7 Collar Clip

Figure 2
Single Adjustable Low Flow Holder attached to AirChek 52

2

Ensure pump has run for 5 minutes before calibrating. Set the pump flow rate at approximately 1.5 L/min (*see Setting or Verifying Flow Rate for High Flow Applications on page 7*).

Connect a constant pressure controller (CPC) (Figure 2, #3) to the pump intake (Figure 2, #1) using 1/4-inch Tygon tubing.

Using 1/4-inch tubing, connect the intake of the CPC to the outlet of a single adjustable low flow holder (Figure 2, #4).

Insert an opened sorbent tube into the holder's rubber sleeve with the arrow on the tube pointing toward the holder.

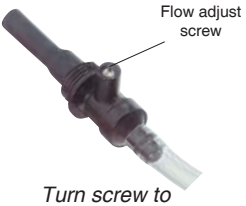
Connect a calibrator to the exposed end of the sorbent tube.

Calibration train with tube in low flow holder

Loosen the brass flow adjust screw on the low flow holder. Activate the pump by pressing the on/off button (Figure 1, #3).

Adjust the flow rate by turning the flow adjust screw (Figure 2, #6) on the adjustable low flow holder until the calibrator indicates the desired flow.

Do not adjust the flow on the pump. Adjust the flow only by using the flow adjust screw on the low flow holder.



Turn screw to adjust flow.

continued on page 11

2

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When the desired flow is set, turn off the pump by pressing the on/off button. Disconnect the calibrator.

Replace the sorbent tube used for setting the flow with a new unexposed sorbent tube for sample collection.

Place the appropriate size tube cover over the tube (Figure 2, #5), and screw it into place on the low flow holder.

3

Sampling - Low Flow

Before use, allow pump to equilibrate after moving it from one temperature extreme to another

Protect sample pump from weather when in use outdoors.

Use of any device other than the approved battery pack to power the pump voids the UL Listing for intrinsic safety and any warranty.

Clip holder to worker and pump to belt.

For personal sampling, clip the low flow holder to the worker in the breathing zone and the pump to the worker's belt.

Press the on/off button to clear the elapsed time display and to start sampling. Record the start time. The LCD will automatically track elapsed pump run time.

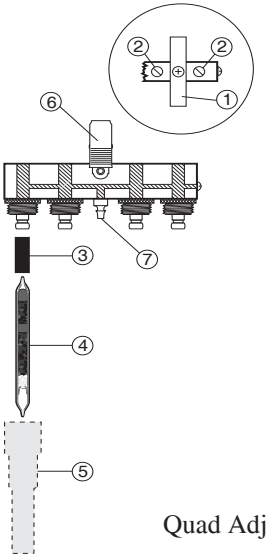
At the end of the sampling period, press the on/off button and record stop time.

To return to high flow, remove the CPC and low flow holder.

For possible displays during sampling, see page 8.

Low Flow Applications (5 to 500 ml/min)

Using CPC & Multiple-tube Adjustable Low Flow Holder Accessories



1 Anti-tamper cover

2 Flow adjust screws

3 Rubber sleeve

4 Sorbent sample tube

5 Protective cover

6 Clothing clip

7 Low flow holder outlet

Figure 3
Quad Adjustable Low Flow Holder

Setup - Multiple Tube

For a diagram of the pump, see Figure 1, page 9.

1

Ensure that the battery is fully charged before sampling. *See page 5 for details.*

After charging the battery pack, it is good practice to run the pump for approximately 5 minutes before calibrating. This ensures the battery is in more steady-state conditions and improves the agreement in pre and post-sampling calibrations.

Charger and battery connected

Setting or Verifying Flow Rate - Multiple Tube

When performing multiple-tube sampling using an adjustable low flow holder (dual, tri, or quad), ensure the pump flow rate is set at 1.5 L/min. The maximum flow rate through any one tube is 500 ml/min*. Calculate the sum of all tube flow rates. If the sum is ≤ 1000 ml/min, proceed with calibration and sampling without any further adjustment to the pump flow rate. If the sum is >1000 ml/min, set the pump flow rate 15% higher than the sum of tube flow rates.

* *Back pressure across some sample tubes can be higher than average. In these instances, the maximum flow rate of 500 ml/min per tube may not be achieved.*

Before use, allow pump to equilibrate after moving it from one temperature extreme to another.

Set pump flow rate to 1.5 L/min. Connect a constant pressure controller (CPC) (Figure 2, page 10) to the pump intake (Figure 2, #1) using 1/4-inch Tygon tubing.

Using 1/4-inch tubing, connect the intake of a CPC (Figure 2, #3) to the outlet of a multiple-tube adjustable low flow holder (Figure 3, #7).

2

Insert an opened sorbent tube into each rubber sleeve of the low flow holder (Figure 3, #3 and 4) with the arrow on the tube pointing toward the holder.

If sampling with fewer tubes than number of ports, insert unopened sorbent tubes in the empty ports to seal them.

Connect CPC to pump intake, holder to CPC, and tube inlet to calibrator.

Note the flow rates specified by each sampling method and add them together. If the sum is ≤ 1000 ml/min, proceed to the next step. If the sum is >1000 ml/min, multiply the total tube flow rate by 1.15 and set the pump for that flow rate.

continued on page 14

2

cont'd

Connect a calibrator to the exposed end of a sorbent tube, loosen the screw on the appropriate port of the low flow holder, and activate the pump by pressing the on/off button.

Turn the brass flow adjust screw (Figure 3, #2) on the low flow holder until the desired flow rate is achieved. Turn clockwise to decrease flow.

Do not adjust the flow on the pump. Adjust the flow only by using the flow adjust screw on the low flow holder. Observe tube flow rate on calibrator.

When the desired flow is set on the initial tube, turn off the pump by pressing the on/off button. Remove the calibrator from the tube and connect to the exposed end of the next sorbent tube. Press the pump's on/off button and repeat the flow adjust process until all tubes are flow calibrated. Changing the flow on one tube will not affect the flow rate through the remaining tubes.

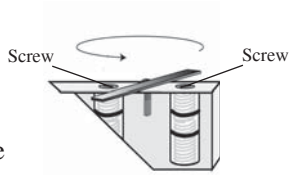


Figure 4 -
Cut-away of Tri/Quad Low Flow Holder

For tri and quad models, first rotate each anti-tamper cover (Figures 3 [on page 12] and 4) to expose the flow adjust screw, then adjust until calibrator indicates the desired flow.

When the flow rate is set for each tube, press the pump's on/off button and disconnect the calibrator.

Replace the sampling media used for calibration with unexposed media for sample collection. Use a protective tube cover to prevent tube breakage.

Sampling - Multiple Tube

3

Before use, allow pump to equilibrate after moving it from one temperature extreme to another

Protect sample pump from weather when in use outdoors.

Use of any device other than the approved battery pack to power the pump voids the UL Listing for intrinsic safety and any warranty.

Clip holder to worker and pump to belt.

For personal sampling, clip the low flow holder to the worker in the breathing zone and the pump to the worker's belt.

Press the on/off button to clear the elapsed time display and to start sampling. Record the start time. The LCD will automatically track elapsed pump run time.

At the end of the sampling period, press the on/off button and record stop time.

To return to high flow, remove the CPC and low flow holder.

For possible displays during sampling, see page 8.

Maintenance

Pump Inlet Filter

The AirChek 52 Sampler is fitted with a filter/trap just below the pump intake. This prevents particles from being drawn into the pump mechanism. The filter should be replaced periodically. Follow this procedure:

1. Grip the inlet hose barb (Figure 1, #4 on page 9) and unscrew it counterclockwise.
2. Holding the pump upside down, use a small flathead screwdriver or tweezers to remove filter.
3. Place a new filter in the intake. Ensure the rubber gasket inside the inlet hose barb is still in place.
4. Screw the inlet hose barb back into place.

Replacing the Battery Pack

To enhance battery life, SKC ships battery packs separate from the pump (*see Charging the Battery Pack on page 5*). Once installed, completely charge the battery pack before operating the pump. It may be necessary to charge the battery a few times before maximum battery capacity is achieved.

1. Loosen two security screws on bottom of pump case and allow them to fall to the out position.
2. Pinch battery pack release arms and pull the bottom half of the pump case away from the top half.
3. Align arms on top half of case with slots on either side of the new battery pack housing. Ensure the back of the battery pack with the charging jack is on the same side as the belt clip.
4. Slide battery pack up until arms click into place.

5. Push each security screw into the battery pack housing and tighten.

Use of a repaired or rebuilt battery pack voids any warranty and the UL Listing for intrinsic safety.

For information on SKC pump battery packs, visit http://www.skcinc.com/instructions/1756.pdf.

Battery Eliminator

The Battery Eliminator is an accessory that converts alternating current (AC) to direct current (DC) from which the pump can be operated for extended runs. **The Battery Eliminator should be used in non-hazardous locations only.** *See page 24 for ordering*.

To use the Battery Eliminator, the battery pack must be removed from the pump (*see Maintenance, Replacing the Battery Pack*). The Battery Eliminator is comprised of two pieces, (1) a wall cube that converts AC voltage to DC voltage and (2) a power adapter that reduces DC voltage. The wall cube fits into a standard wall outlet and its plug end is inserted into the power adapter. The power adapter is fitted on the pump in place of the battery pack.

Use of the battery eliminator to power the pump voids the UL Listing for intrinsic safety.

Service Policy

To return products to SKC for servicing:

1. Call 800-752-8472 (724-941-9701 for international customers) to obtain a Return Materials Authorization (RMA) number and Product Decontamination Form.

2. Carefully package the product. Mark the RMA number on any correspondence relating to the return and on the outside of the package.

3. Ship to SKC, freight prepaid, to the following address:

   SKC Inc.
   National Service Center
   863 Valley View Road
   Eighty Four, PA 15330

Package product carefully to prevent damage during transit. Include a contact name, phone number, shipping address, RMA number, and a brief description of the problem. For nonwarranty repairs, a purchase order number and billing address are also required. The Service Department will contact nonwarranty customers with an estimate before proceeding with repairs.

Note: *SKC Inc. will accept for repair any SKC product that is not contaminated with hazardous materials. Products determined to be contaminated will be returned unserviced.*

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Replacement Parts

Internal Stack Parts

No.	Description	Cat. No.
1A-C*	Stack Screws	P51891
2	Inlet/Hose Connect	P20106
2A	Replacement Inlet Filter (pk/10)	P40370
3	Pulsation Dampener	P2010802
4	Stack Plate	N/A
5A-B*	Valve Plates (Top and Bottom)	P213201
6	Diaphragm/Yoke Assembly	P2129B
7	Pump Body	P22417G
8	Motor/Eccentric	P518803
9	Pump Base Plate	P20102
	Full Stack without Motor	P20102A

**Multiple sections of stack included (as indicated in drawing)*

Parts not indicated in illustration

N/A	PC Board	P79592
N/A	Screw and O-ring Set (complete for one pump)	P22402

Use only SKC-approved parts to ensure reliable performance. Failure to do so voids any warranty.

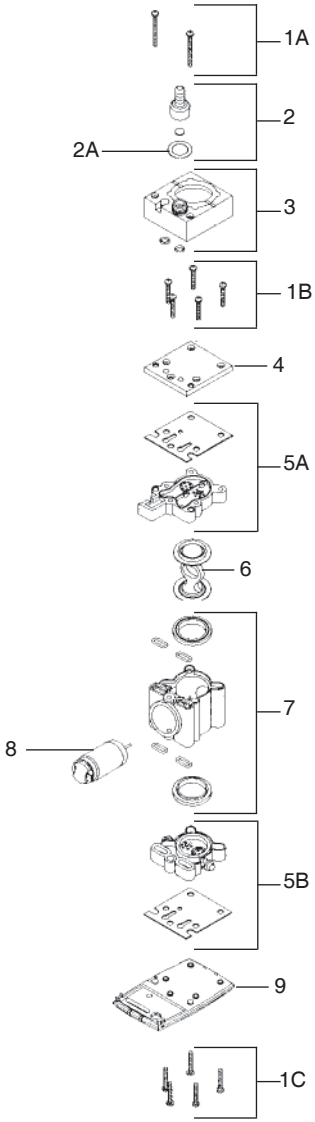
Failure to follow warnings and cautions voids any warranty.

See page 21 for drawing.

Replacement Parts

Internal Stack

See parts listing on page 20



Replacement Parts

External Case Parts

No.	Description	Cat. No.
1	Battery Pack, NiCad or	P78011A
	Battery Pack, NiMH	P78011AMH
2	Battery Pack Release Arms	N/A
3	Battery Pack Security Screws	N/A
4	Compensation Pot A	N/A
5	Compensation Pot B	N/A
6	Power Plug for Battery Pack (pk/5)	P20107
7	Charging Jack (on rear of battery pack)	N/A
8	Impinger Holder Mounting Screws	N/A
9	Inlet	P20106
10	Control Cover	P20105
11	Flow Adjustment Screw	N/A
12	Power Switch (on/off)	N/A
13	Belt Clip (not shown)	P20104
14	LCD	P72391
15	External Case	P2010003

Use only SKC-approved parts to ensure reliable performance. Failure to do so voids the UL Listing for intrinsic safety and any warranty.

Use of a repaired or rebuilt battery pack voids any warranty and the UL Listing for intrinsic safety.

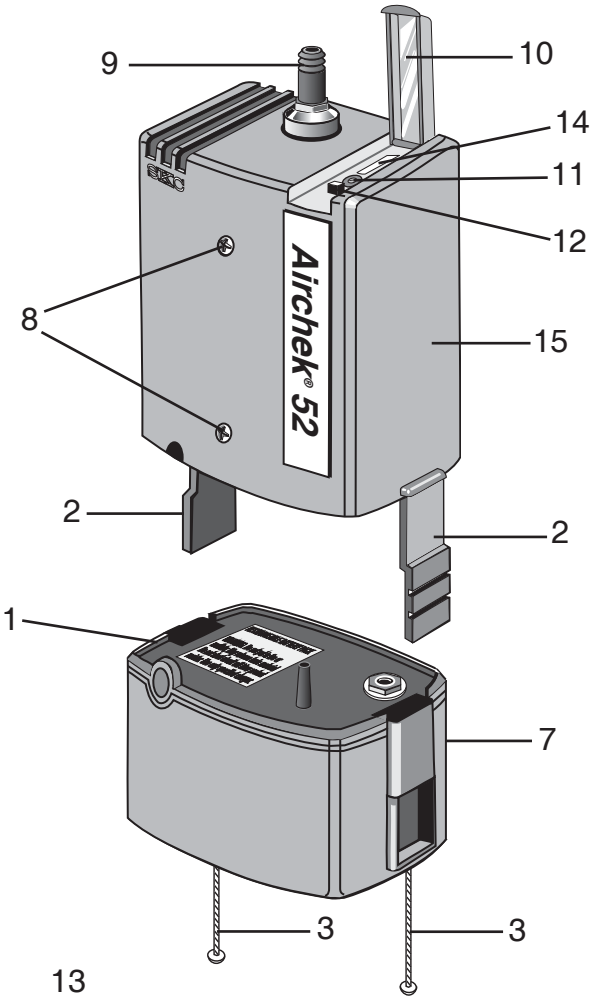
Failure to follow warnings and cautions voids any warranty.

See page 23 for drawing.

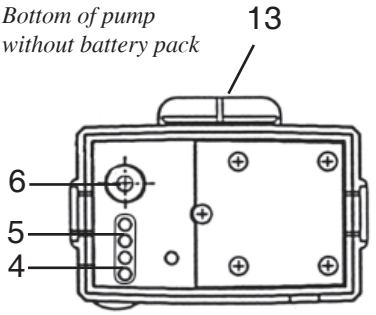
Replacement Parts

External Case Parts

See parts listing on page 22



Bottom of pump without battery pack



Optional Accessories

Calibrator	**Cat. No.**
Defender Primary Standard Calibrator, 50 to 5000 ml/min, includes battery, charger (100-240 V), software, and serial cable	717-510M

Low Flow Sampling Accessories:	**Cat. No.**
Single Holder *(included in Low Flow Kit below)*	224-26-01
Dual Holder	224-26-02
Tri Holder	224-26-03
Quad Holder	224-26-04
Constant Pressure Controller (CPC) *(included in Low Flow Kit below)*	224-26-CPC
Low Flow (5 to 500 ml/min) Adapter Kit includes CPC, single adjustable low flow holder, and Type A tube cover	210-500

Protective Sample Tube Covers:		**Cat. No.**
Type	*For tubes up to:*	
A	70 mm long (standard charcoal) *(included in Low Flow Kit above)*	224-29A
B	110 mm long (large charcoal)	224-29B
C	150 mm long	224-29C
D	220 mm long	224-29D

Battery Maintenance:	**Cat. No.**
PowerFlex Charging System	
5-station, 100-240 V	223-1000
Single, 100-240 V	223-2000
PowerFlex Cable for AirChek 52	223-1004
Battery Eliminator, for sampling using line voltage, *use voids the UL Listing for intrinsic safety*	223-300
Replacement Battery Pack, NiCad	P78011A
Replacement Battery Pack, NiMH	P78011AMH

Pump Accessories:	**Cat. No.**
Screwdriver Set (included with pump)	224-11
Protective Nylon Pouch with belt and shoulder strap, available in:	
Black	224-88
High-profile Red	224-96A
Noise reducing, Black	224-96C

Protective Nylon Pouch

Use of a repaired or rebuilt battery pack voids any warranty and the UL Listing for intrinsic safety.

Failure to follow warnings and cautions voids any warranty.

SKC INC.
LIMITED ONE YEAR WARRANTY

1. SKC warrants that its instruments provided for industrial hygiene, environmental, gas analysis, and safety and health applications are free from defects in workmanship and materials under normal and proper use in accordance with operating instructions provided with said instruments. The term of this warranty begins on the date the instrument is delivered to the buyer and continues for a period of one (1) year.

This warranty does not cover claims due to abuse, misuse, neglect, alteration, accident, or use in application for which the instrument was neither designed nor approved by SKC Inc. This warranty does not cover the buyer's failure to provide for normal maintenance, or improper selection or misapplication. This warranty shall further be void if changes or adjustments to the instrument are made by other than an employee of the seller, or if the operating instructions furnished at the time of installation are not complied with.

2. SKC Inc. hereby disclaims all warranties either expressed or implied, including any implied warranties of merchantability or fitness for a particular purpose, and neither assumes nor authorizes any other person to assume for it any liability in connection with the sale of these instruments. No description of the goods being sold has been made a part of the basis of the bargain or has created or amounted to an express warranty that the goods will conform to any such description. Buyer shall not be entitled to recover from SKC Inc. any consequential damages, damages to property, damages for loss of use, loss of time, loss of profits, loss of income, or other incidental damages. Nor shall buyer be entitled to recover from SKC Inc. any consequential damages resulting from defect of the instrument including, but not limited to, any recovery under section 402A of the Restatement, Second of Torts.

3. This warranty extends only to the original purchaser of the warranted instrument during the term of the warranty. The buyer may be required to present proof of purchase in the form of a paid receipt for the instrument.

4. This warranty covers the instrument purchased and each of its component parts.

5. In the event of a defect, malfunction, or other failure of the instrument not caused by any misuse or damage to the instrument while in possession of the buyer, SKC Inc. will remedy the failure or defect without charge to the buyer. The remedy will consist of service or replacement of the instrument. SKC Inc. may elect refund of the purchase price if unable to provide replacement and repair is not commercially practicable.

6. (a) To obtain performance of any obligation under this warranty, the buyer shall return the instrument, freight prepaid, to SKC Inc., at the following address:

SKC Inc., National Service Center
863 Valley View Road
Eighty Four, PA 15330 USA

(b) To obtain return authorization information or for further information on the warranty performance you may telephone 724-941-9701 at the above address. See Service Policy section in operating manual (if applicable).

7. This warranty shall be construed under the laws of the Commonwealth of Pennsylvania which shall be deemed to be the situs of the contract for purchase of SKC Inc. instruments.

8. No other warranty is given by SKC Inc. in conjunction with this sale.